

**In the Specification:**

Applicant hereby amends the specification as follows:

1. Page 7, Line 15: amend "to exceed a probability threshold" to "to be below a probability threshold".
2. Changes to the paragraph at Page 7, Line 14 are indicated below:

"where c is the number of counts from the current spectra over the same number of channels used to obtain  $\mu_n$ . Spectra determined ~~to exceed a probability threshold~~ to be below a probability threshold in corresponding channels of the two detectors, step 76, is identified as a 'hit' arising from a radioactive source, step 78."
3. Page 7, Line 26: amend "is above some minimum threshold" to "is below some maximum threshold".
4. Changes to the paragraph at Page 7, Line 23 are indicated below:

"For channels 0-25, the calculated probability is based on one channel and two time slices. This means  $-\ln(P_i)$  from the preceding time slice is added to the present probability. The previous two time slices for the second detector are also summed and, if the count probability from each detector ~~is above some minimum threshold~~ is below some maximum threshold, the event is classified as a radioactive source."
5. Page 7, Line 30: amend "is above a threshold" to "is below a threshold".
6. Page 8, Line 1: amend "is also above some minimum threshold" to "is also below some maximum threshold".
7. Changes to the paragraph at Page 7, Line 28 and Page 8 Line 1 are indicated below:

"Alternatively, in considering multiple time slices, the probability 74a obtained from two slices with the first detector 72a may be added to the probability 74b for the corresponding two time slices for the second detector 72b, and if the resulting sum ~~is above a threshold~~ is below a threshold, the event is classified as a radioactive source provided that the count probability from each detector ~~is also above some minimum threshold~~ is also below some maximum threshold."
8. Page 9, Line 13: Insert the following paragraph:

"Practitioners of ordinary skill will recognize that while the foregoing presentation of the preferred embodiment calculated the probability that the counts were from background, the equivalent result of the invention, that is, comparing probabilities in order to detect correlated counts across detectors or time slices, can be achieved by calculating the

probability that the counts were from a source. That is, the first probability is one minus the second probability because either the counts are from background or they are from a radioactive source. Therefore, wherever in the description of the process the probability that the counts are from background is calculated and the value checked to be below a threshold, the invention can equivalently be implemented by calculating the probability that the counts are from a source, and checking whether that value is above a threshold."